Contr. Univ. Michigan Herb. 21: 175–195. 1997.

A REVISION AND REDEFINITION OF PSEUDABUTILON (MALVACEAE)

Paul A. Fryxell
Department of Botany
University of Texas
Austin, Texas 78713

INTRODUCTION

Fries (1908) defined *Pseudabutilon* R. E. Fr. on the basis of the presence of an endoglossum, an internal partition that divides the carpel into two chambers, one above the other. This structure, however, is now known to occur in many relatively unrelated malvaceous genera, including some or all species of *Allosidastrum* (Hochr.) Krapov., Fryxell & D. M. Bates, *Allowissadula* D. M. Bates, *Anisodontea* C. Presl, *Batesimalva* Fryxell, *Dirhamphis* Krapov., and *Gaya* H. B. K., among others. The endoglossum of these various genera exhibits a variety of structures that are evidently not homologous, although a careful comparative anatomical study has not yet been undertaken, other than the discussion presented by Hochreutiner (1920) wherein the term "endoglossum" was proposed. Furthermore, several genera (e.g., *Malvastrum* A. Gray, *Allosidastrum*, *Fuertesimalva* Fryxell, etc.) have what is best regarded as a vestigial endoglossum in at least some species. Moreover, *Pseudabutilon* as here delimited has the endoglossum present or absent depending upon the species. This polymorphism, too, is known in other genera. The lack of importance of the endoglossum as a generically defining character in *Pseudabutilon* is emphasized by its variable expression in *P. depauperatum* (present or absent; cf. Kearney, 1952; Bates, 1971, p. 370) and by its partial development in *P. glomeratum*, where it is a reduced, fimbriate structure that is easily overlooked. These are simply intermediate expressions of the range from a well-developed endoglossum (e.g., *P. callimorphum*, *P. orientale*) to no endoglossum (e.g., *P. benense*, *P. virgatum*) among species that are evidently congeneric. In addition to the distinctive chromosome number (x = 8, differing from most species of *Abutilon* or of *Wissadula*, which have x = 7), *Pseudabutilon* as circumscribed here is characterized by distinctive and relatively uniform fruit morphology (sometimes including the presence of an endoglossum); similar pubescence patterns, usually including small stellate hairs and sometimes long simple hairs, rarely glandular hairs; small rounded and ecostate calyx; and other characters including a distinctive chromosome number. Fryxell and Stelly (1993) reviewed the cytotaxonomical problems and noted the need for realignment of generic boundaries within this group of species. Broader questions of generic limits are discussed by Fryxell (1997).

Kearney (1951, 1955, 1958) and Hutchinson (1967, who more or less followed Kearney, 1951) accepted Fries's definition of the genus. They included within *Pseudabutilon* those species with an endoglossum and excluded those species that lack an endoglossum, leaving the latter in *Abutilon*. Most recent floristic works have conformed to this view, except Fryxell (1988), who reduced *Pseudabutilon* sensu Fries to synonymy with *Abutilon*. With respect to the large genus *Abutilon*, Kearney (1955) noted: "The genus is a very difficult one and much further investigation

will be required to solve all of the problems." Some of these problems involve also the genus *Wissadula* and related genera, and have been addressed by Fryxell (1976), Bates (1978a, 1978b), and Krapovickas et al. (1988). The present contribution is intended as a continuation of these studies. The recognition of *Pseudabutilon*, with the revised circumscription that follows, is intended to solve another of the problems alluded to by Kearney.

Fries (1908) constituted *Pseudabutilon* with two subgenera, subg. *Wissadulastrum* (K. Schum.) R. E. Fr. and subg. *Abutilastrum* (Baker f.) R. E. Fr., both originally treated as sections of *Wissadula*, but neither alluded to by Fries as "typical" of his new genus. The typification of these two subgenera was discussed by Fryxell (1988). Here *Pseudabutilon* will be redefined by exclusion of subgen. *Wissadulastrum* (following Bates, 1978b) and by enlarging the number of species included in subgen. *Abutilastrum*, the additional species drawn from *Abutilon*, and including the description of three new species. The species transferred from *Abutilon* are those that lack an endoglossum (Fries's defining character) but which are clearly congeneric with those that possess an endoglossum. The circumscription of the enlarged genus will thus need an amended description. Those species of this group that are known cytologically all have chromosome numbers of 2n = 16, including *Abutilon anderssonianum* Garcke, *A. ellipticum* Schltdl., *A. thurberi* A. Gray, *A. umbellatum* (L.) Sweet, *A. virgatum* (Cav.) Sweet, and *Pseudabutilon callimorphum* (Hochr.) R. E. Fr. (Bates 1966, 1976; Fernández 1974; Krapovickas 1957).

TAXONOMY

Pseudabutilon R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 96. 1908.—LECTOTYPE, designated by Fryxell, 1988: *Pseudabutilon scabrum* (C. Presl) R. E. Fr.

Abutilon sect. *Anasida* Griseb., Fl. Brit. W.I. 78. 1859.—TYPE: *Abutilon umbellatum* (L.) Sweet.

Wissadula sect. *Abutilastrum* Baker f., J. Bot. 31: 71. 1893.—TYPE: *Wissadula scabra* C. Presl.

Shrubs or subshrubs, the stems usually densely stellate-pubescent (rarely glabrescent), sometimes also with long simple hairs. Leaf blades ovate to elliptic, basally cordate to truncate, crenate-serrate (rarely subentire), acute or acuminate, minutely pubescent (rarely glabrescent), sometimes with long appressed simple hairs, at least on upper surface; petioles much shorter than the blades to subequal to the blades; stipules subulate or linear, 1–11 mm long. Flowers solitary or glomerate in the axils, or borne in small axillary umbels or racemes, sometimes aggregated into terminal inflorescences, the pedicels short or long and slender; calyx basally rounded, small, ecostate, about half-divided or less (rarely more deeply divided), stellate-pubescent and sometimes also with long simple hairs, sometimes with glandular hairs or with twisted subarachnoid hairs; petals yellow (sometimes white), 4–15 mm long; staminal column shorter than the corolla, pallid, usually more or less stellate-pubescent, sometimes glabrous, the filaments short, anthers yellow; styles 5–10, with capitellate stigmas. Fruits 5–10 mm in diameter, stellate-pubescent or hirsute, sometimes with twisted subarachnoid hairs; mericarps 5–10, apically acute to spinescent, with or without an endoglossum (of dorsal origin), the lateral walls sometimes striate-reticulate basally, especially in species with a well-developed endoglossum, 3-seeded. Base chromosome number: x = 8.

KEY TO THE SPECIES OF PSEUDABUTILON

1. Upper surface of leaf with appressed simple hairs 1–2 mm long in addition to small stellate hairs (or stellate hairs absent); stems with long (2–4 mm) simple spreading hairs in addition to small stellate hairs (or stellate hairs absent).
   2. Mericarps 13–14 mm long, with divergent spines 1–4 mm long; petals 8–15 mm long; inflorescence a terminal raceme or panicle; endoglossum absent; Mexico, Guatemala, Honduras. 8. *P. ellipticum.*
   2. Mericarps 5–6 mm long, with spines 2–3 mm long; petals 4–9 mm long; flowers solitary in the leaf axils; endoglossum present.
      3. Carpels 5; petals 4–6 mm long; leaf venation more or less pedate; stem vesture lacking understory of stellate hairs; Mexico. 17. *P. thurberi.*
      3. Carpels 6–8; petals 7–9 mm long; leaf venation palmate; stem vesture with understory of stellate hairs; Argentina. 11. *P. longepilosum.*
1. Upper surface of leaf stellate-pubescent or with bifurcate hairs, these never more than 0.5 mm long, the pubescence sometimes farinose; stems minutely stellate-pubescent (or long spreading hairs sometimes present).
   4. Calyx (and pedicel) with minute glandular hairs; carpels usually 5, 5–6 mm long; seeds glabrous.
      5. Long simple hairs sometimes present on stems; mericarps with spines ca. 1.5 mm long, the endoglossum present; Mexico, Guatemala. 13. *P. orientale.*
      5. Long simple hairs lacking on stems; mericarps with spines 3–3.5 mm long, the endoglossum absent; Bolivia, Paraguay. 1. *P. benense.*
   4. Calyx (and pedicel) usually stellate-pubescent, lacking glandular hairs; carpels 5–11, 4–11 mm long; seeds glabrous to minutely pubescent or verruculate.
      6. Mericarps 10–11 mm long, with spines up to 2 mm long; endoglossum absent; Panama (Colombia?). 6. *P. cymosum.*
      6. Mericarps 4–9 mm long, with spines obsolete or up to 4 mm long; endoglossum present or absent.
         7. Flowers short-pedicellate (less than 5 mm) or subsessile; carpels 8–10.
            8. Calyx 3–6 mm long; inflorescence racemiform or paniculate; endoglossum completely covering the lowermost seed; spines of mericarps obsolete; Mexico, Guatemala, Honduras. 15. *P. scabrum.*
            8. Calyx 7–8 mm long; flowers solitary or inflorescence glomerulate or spiciform; endoglossum completely or partially covering the lowermost seed; spines of the mericarps 1–2 mm long; South America.
               9. Endoglossum fimbriate, partially covering lowermost seed; inflorescence glomerulate or spiciform; Bolivia. 9. *P. glomeratum.*
               9. Endoglossum completely covering lowermost seed; flowers solitary; Brazil (Bahia). 14. *P. pintoi.*
         7. Flowers manifestly pedicellate (pedicels often more than 1 cm long); carpels 5–10.
            10. Stems with long spreading simple hairs.
               11. Flowers and fruits in axillary umbels; endoglossum absent; widespread. 18. *P. umbellatum.*
               11. Flowers and fruits solitary or paired in the leaf axils; endoglossum present; South America.
                  12. Stipules 7–12 mm long; calyx pilose and stellate-pubescent; upper leaf surface with minute often bifurcate hairs. 4. *P. cinereum.*
                  12. Stipules 3–5 mm long; calyx stellate-pubescent; upper leaf surface with minute stellate hairs. 2. *P. callimorphum* var. *callimorphum.*
            10. Stems lacking long spreading hairs, except sometimes present in the inflorescence.
               13. Flowers in few-flowered axillary inflorescences, these sometimes aggregated into a terminal compound inflorescence; carpels 5–8.
                  14. Leaves lanceolate-ovate, twice as long as wide; calyx 5–6 mm long, deeply divided, stellate-pubescent; carpels 8, with apiculum ca. 1 mm long; stipules 4–6 mm long; endoglossum absent; Peru. 5. *P. cowanii.*
                  14. Leaves broadly ovate; calyx 5–8 mm long, half-divided or less, hirsute; carpels 5–8, with divergent apical spines 1–4 mm long; stipules 8–10 mm long; endoglossum present or absent; Mexico, West Indies, Central and South America.

15. Hairs of calyx 1 mm long or less, twisted and whitish; carpels 5, the endoglossum absent; inflorescences of axillary racemes with subumbellate elements forming an open terminal inflorescence; Bolivia. 10. *P. leucothrix.*

15. Hairs of calyx 3–4 mm long, straight and brownish; carpels 5–8, the endoglossum present or absent; inflorescences axillary umbels, sometimes forming dense terminal inflorescences.
    16. Carpels with divergent apical spines 2–4 mm long; calyx 6–8 mm long, hirsute, the hairs 3–4 mm long; endoglossum absent; widespread. 18. *P. umbellatum.*
    16. Carpels with apical spines 1–2.5 mm long; calyx 5–6 mm long, stellate-pubescent; endoglossum present or absent; Galapagos Archipelago. 7. *P. depauperatum.*

13. Flowers usually solitary or in axillary fascicles; carpels 5–10, the apical spines usually 2 mm long or less; South America.
    17. Endoglossum absent; flowers solitary or in axillary fascicles, often aggregated into dense inflorescences; minute hairs on upper leaf surface often bifurcate. 19. *P. virgatum.*
    17. Endoglossum present or absent; flowers usually solitary (or paired) in the leaf axils; minute hairs on upper leaf surface usually stellate.
        18. Carpels 5–6; petals 5–6 mm long; stipules 1–2 mm long; Peru. 12. *P. nigropunctulatum.*
        18. Carpels 5–10; petals 8–12 mm long [unknown in *P. pintoi*]; stipules 4–10 mm long.
            19. Carpels 8–10.
                20. Pedicels 0.3–0.4 cm long; Brazil. 14. *P. pintoi.*
                20. Pedicels 1.5–6 cm long; Paraguay, Argentina. 3. *P. callimorphum* var. *intermedium.*
            19. Carpels 5–8.
                21. Carpels 7–8, with spine (or apiculum) less than 1 mm long; endoglossum present; Paraguay, Bolivia, Argentina. 16. *P. stuckertii.*
                21. Carpels 6–8, with spine 1–2.5 mm long; endoglossum present or absent; Galapagos Archipelago. 7. *P. depauperatum.*

1. Pseudabutilon benense (Britton) Fryxell, comb. nov. *Sida benensis* Britton, Bull. Torrey Bot. Club 16: 153. 1889. *Abutilon benense* (Britton) Baker f., J. Bot. 31: 338. 1893.—TYPE: BOLIVIA. Junction of Rivers Beni and Madre de Dios, *Rusby 1455* (holotype: NY!; isotypes: CTES! GH! K! MICH! NY–2! P as photo! CTES! PH! US!).

Abutilon balansae (Hassl.) Hassl., Repert. Spec. Nov. Regni Veg. 7: 376. 1909. *Wissadula balansae* Hassl., Bull. Herb. Boissier sér 2. 7: 458. 1907, non *Wissadula balansae* Baker f., J. Bot. 31: 69. 1893.—TYPE: PARAGUAY. San Bernardino, *Hassler 390* (syntype: NY!); PARAGUAY. Sierra de Amambay, Esperanza, *Hassler 10564* (syntypes: CTES! G!).

Subshrubs to 1 m tall, the stems minutely stellate-pubescent. Leaf blades up to 9 cm long, 6.5 cm wide, ovate, basally cordate, crenate, acute or (usually) acuminate, minutely and obscurely stellate-pubescent above and beneath; petioles 0.5–0.75 times as long as blade; stipules 1–1.5 (–5) mm long, subulate. Flowers solitary in the axils or aggregated apically into a raceme or panicle; pedicels 1–2 cm long, slender, viscid; calyx 5 mm long, shallowly lobed, densely viscid; petals 6–8 mm long, yellow, pubescent on margins of claw; staminal column 2–3 mm long, pallid, pubescent, the filaments 1 mm long; styles 5, surpassing the androecium. Fruits 5–9 mm in diameter, hispid-tomentulose; mericarps 5, 3-seeded, with apical spines 3–3.5 mm long; endoglossum absent; seeds 2 mm long, glabrous.

Distribution. Paraguay and Bolivia, possibly also in Venezuela.

ADDITIONAL SPECIMENS EXAMINED. **Venezuela**. YARACUY: al pie de la Sierra de Aroa, San Felipe, *Aristeguieta 2021* (NY). **Paraguay**. GUAIRÁ: Cerro Nelville, 5 km E de Mbocayaty, 25°42'S, 56°25'W, *Schinini et al. 27898* (TEX). **Bolivia**. Without locality, *Bang 2621* (US).—SANTA CRUZ: 22 km N de Gutiérrez (camino Camiri–Santa Cruz), 19°20'S, 63°30'W, *Krapovickas & Schinini 31451* (CTES, MO).

The Venezuela specimen cited above (*Aristeguieta 2021*) is geographically disjunct from the remainder of the species and differs in having larger fruits, but is tentatively included here.

2. Pseudabutilon callimorphum (Hochr.) R. E. Fr. var. **callimorphum**, Kongl. Svenska Vetenskapsakad. Handl. 43(4): 105. 1908. *Sida callimorpha* Hochr., Bull. Herb. Boissier, sér. 2. 5: 295. 1905.*Wissadula callimorpha* (Hochr.) Hassl., Bull. Herb. Boissier, sér. 2. 7: 455. 1907.—TYPE: PARAGUAY. Prope Concepción, *Hassler 7558* (lectotype, here designated: G!; isotypes: BM! P as photo F–35532! UC as photo! CTES!).

Subshrubs 0.8–1.2 m tall, the stems stellate-tomentulose and with scattered long (2 mm) simple hairs intermingled. Leaf blades to 4.5 cm long, to 3.5 cm wide, ovate to broadly ovate (rarely subtrilobed), basally cordate, crenate, acute, palmately 5–7-nerved, with appressed stellate hairs above and beneath; petioles 1–3 cm long, with pubescence like that of stem; stipules 3–5 mm long, narrowly linear, minutely stellate-pubescent. Flowers axillary, solitary; pedicels 3–5.5 cm long, slender, with pubescence like that of stem; calyx 7–8 mm long, the lobes 4 mm long, 3 mm wide, tomentulose; petals 9–11 mm long, yellow, pubescent on margins of claw; staminal column ca. 2.5 mm long, the filaments 1.5–2 mm long; styles 7. Fruits 6–8 mm in diameter, stellate-pubescent, the mericarps 7, 7–8 mm long (including 1 mm apiculum), 3 mm wide, 3-seeded, divided into two cells by an endoglossum (one seed in lower cell, two in upper); seeds ca. 3 mm long, minutely pubescent.

Distribution. Paraguay, Bolivia, and Argentina.

ADDITIONAL SPECIMENS EXAMINED. **Bolivia**. SANTA CRUZ: Prov. Caballero, 5.7 km al SE de San Isidro, 18°4'S, 64°24'W, *Solomon & Nee 17977* (MO, NY). **Argentina**. CHACO: Depto. Río Bermejo, 8 km S de Puerto Vélaz, *Cristóbal et al. 2093* (CTES, NY); Depto. 1° de Mayo, Colonia Benítez, *Schulz 9043* (CTES, NY); Depto. 12 de Octubre, Estancia Valverde, al W de General Pinedo, sobre el límite con Santiago del Estero, *Schulz 15346* (CTES, NY).—CORRIENTES: Corrientes, *Krapovickas 43692* (CTES, NY).

3. Pseudabutilon callimorphum var. **intermedium** Hassl., Repert. Spec. Nov. Regni Veg. 7: 76. 1909. —TYPE: PARAGUAY. Gran Chaco: ad ripam occidentam flum. Paraguay prope Santa Rita, latit. S 23°20'–23°30', *Rojas* [for Hassler] *2362* (isotypes: G as photo F–23752! MO! NY–2! P as photo CTES!).

Subshrubs, the stems minutely stellate-pubescent, the hairs yellowish or ferrugineous, 0.1–0.3 mm long. Leaf blades 3–7.5 cm long, ca. as wide as long, broadly ovate, basally cordate, coarsely crenate-serrate, acute or acuminate, palmately (or sometimes pedately) 5–7-nerved, minutely pubescent above, the hairs often bifurcate, antrorsely oriented, ca. 0.3 mm long, minutely stellate-pubescent beneath, the hairs ca. 0.3 mm long; petioles 0.5–1 times the length of the blades, with pubescence like that of the stem; stipules 3–5 mm long, subulate. Flowers solitary in the leaf axils; pedicels slender, 1.5–6 cm long, with pubescence like that of the stem, articulated 2–3 mm below the flower; calyx 7–8 mm long, densely and evenly stellate-pubescent, the hairs coarser toward the base, ferrugineous; petals 1 cm

long, yellow, minutely pubescent on margins of claw, otherwise glabrous; staminal column 3 mm long, sparsely stellate-pubescent, the filaments 1–2 mm long; styles 8–10, exceeding the stamens. Fruits 8–9 mm in diameter, densely and evenly stellate-pubescent; mericarps 8–10, ca. 7 mm tall, the apiculum 1 mm long or less, 3-seeded, laterally smooth, each with an endoglossum; seeds 2 mm long, minutely and sparsely pubescent.

Distribution. Paraguay and northern Argentina at low elevation.

Additional Specimens Examined. **Paraguay**. Fortín Tte. Enciso, ruta Trans-Chaco, *Schinini & Bordas 16484* (CTES, NY); Ruta Trans-Chaco, 21°30'S, 61°15'W, *Schinini & Bordas 16505* (CTES, NY). **Argentina**. Formosa: Riacho Monte Lindo, *Cristóbal et al. 2151* (CTES, NY).

4. Pseudabutilon cinereum (Griseb.) Krapov., Bol. Soc. Argent. Bot. 24: 206. 1985. *Abutilon cinereum* Griseb., Abh. Königl. Ges. Wiss. Göttingen 24: 45. 1879.—Type: Argentina. Salta: Pasage del fl. Juramento, *Lorentz & Hieronymus 291* (holotype: GOET!; isotype: UC as photo! CTES!).

Shrubs 0.5–2 m tall, the stems minutely stellate-puberulent and with spreading simple hairs 1–3 mm long. Leaf blades 3–8 (–13) cm long, 2.5–6 (–10) cm wide, ovate, basally cordate, prominently serrate, acuminate, palmately 5–7-nerved, concolorous, densely and softly pubescent, the hairs frequently bifurcate above, stellate beneath; petioles 1–3 cm long, with pubescence like that of stem; stipules 7–12 mm long, linear, ciliate. Flowers solitary in the leaf axils, sometimes geminate, often aggregated in a terminal inflorescence more or less above the leaves; pedicels 1.5–3 cm long [or flowers and fruits subsessile in *Krapovickas et al. 19142, 19281*], with pubescence like that of stem; calyx 7–8 mm long, half-divided, stellate-pubescent and pilose; petals 8–11 mm long, yellowish to whitish, pubescent on margins of claw; staminal column 2–3 mm long, the filaments 1.5 mm long; styles 7–9, exserted from staminal column. Fruits stellate-pubescent (and with glandular hairs?), 8–9 mm in diameter, exceeding the calyx; mericarps 7–9, apically apiculate (apiculum 1 mm long), 6–7 mm long, 3-seeded, with an endoglossum covering the lowermost seed; seeds 1.5–2 mm long, minutely pubescent.

Distribution. Bolivia and northwestern Argentina.

Additional Specimens Examined. **Bolivia**. Santa Cruz: Prov. Cordillera, 7 km W de Boyuibe (20°20'S, 63°20'W), *Krapovickas & Schinini 31308* (CTES, F, NY, US).—Tarija: Ruta Tarija–Villa Montes, Bajada de Chimeo, *Krapovickas et al. 19232* (CTES, NY); Prov. O'Connor, Puerto Margarita, Río Pilcomayo, 21°10'S, 63°50'W, *Krapovickas & Schinini 39096* (CTES, MO). **Argentina**. Cata-marca: Depto. Andalgalá, 3 km SE of Andalgalá, *Cantino 774* (CTES); Depto. Belén, 11.7 km E of Rt. 40 on road to Pozo de Piedra, *Spooner & Clausen 4602* (NY).—Córdoba: Depto. Isehilín, Dean Funes, *Cuezzo 706* (MO).—Chaco: Depto. 1° de Mayo, Colonia Benítez, *Schulz 9204* (CTES, NY).—Formosa: Depto. Formosa, Riacho Monte Lindo, *Cristóbal et al. 2121* (CTES, NY).—La Rioja: Depto. Capital, near Carrizal, *Pedersen 11812* (CTES).—Mendoza. Depto. Godoy Cruz, Cacheuta, *O'Donell 1134* (MO).—Salta: Depto. Metán, Río Juramento, Ruta 34, *Krapovickas et al. 18597* (CTES, NY), *Krapovickas et al. 18599* (CTES, NY); Metán, *O'Donell 4628* (MO).—Santiago del Estero: entre Monte Quemado y Campo Gallo, *Castiglioni-Ragonese 7144* (CTES); Depto. Río Hondo: Los Naranjitos, *Legname 105* (NY).—San Juan: Depto. Zonda, Sierra Alta de Zonda, Km 29 del camino a Calingaste, *Nicora et al. 8449* (CTES).

5. Pseudabutilon cowanii Fryxell, sp. nov.—Type: Peru. Amazonas: Chachapoyas, Nogal Cucho, camino de Balsas hacia Chachapoyas, 1830 m, 6 Nov 1984, *Cowan, Canne & Torrel 4290* (holotype: TEX!; isotypes: CPUN! NY! TEX! USM!).

Frutices dense stellato-pubescentes; laminis foliorum anguste lanceolati-ovatis (duplo longioribus quam latioribus); floribus atque fructibus in umbellis axillaribus paucifloribus longi-pedunculatis; calycibus profunde divisis; fructibus grosse hirsutis, mericarpiis 8 unumquidque apiculo 1 mm longo sine endoglosso.

Shrubs 1 m tall, the stems densely and minutely stellate-pubescent. Leaf blades 5–7 cm long, 2.5–3.5 cm wide, narrowly lanceolate-ovate (about twice as long as wide), basally cordate, crenate-dentate, acute, very finely pubescent above (the hairs stellate and bifurcate), densely and coarsely pubescent beneath (the hairs stellate and up to 0.5 mm long); petioles 2–4.5 cm long, with pubescence like that of stem; stipules 4–6 mm long, subulate, minutely pubescent, persistent. Flowers and fruits borne on axillary few-flowered umbels, the umbels subtended by an obsolete leaf and stipules; peduncles up to 7 cm long, the pedicels 1–1.5 cm long; calyx [in fruit] 5–6 mm long, deeply divided, the lobes 2–3 mm wide (or narrower); flowers otherwise unknown. Fruits 6–7 mm long, 7–9 mm in diameter, densely and coarsely hirsute (the hairs mostly 0.5 mm long); mericarps 8, apiculate, the apiculum ca. 1 mm long, 3-seeded, lacking an endoglossum; seeds 2 mm long, sparsely and minutely pubescent.

Distribution. Known only from the type collection at 1800 m elevation.

The new species is distinctive for its long-pedunculate inflorescences, and for its relatively deeply divided calyx with narrow lobes. Its shows a resemblance to *P. umbellatum* in its umbellate inflorescence, to *P. cymosum* and *P. virgatum* in its narrowly lance-ovate leaves, but differs from each of these as indicated in the key. The specific epithet is chosen to honor Clark P. Cowan, collector of the type material.

6. Pseudabutilon cymosum (Triana & Planch.) Fryxell, comb. nov. *Abutilon cymosum* Triana & Planch., Ann. Sci. Nat. Bot. ser. 4. 17: 185. 1862.—TYPE: PANAMA. Veraguas, *Seemann 1628* (lectotype, designated by Robyns, 1966: K!).

Shrubs 1–2 m tall, the stems stellate-pubescent. Leaf blades up to 9 cm long, ovate (ca. twice as long as wide), basally cordate, serrate, acuminate, somewhat discolorous, stellate-pubescent; petioles up to 3 cm long, stellate-pubescent; stipules subulate, ca. 3 mm long. Flowers and fruits in terminal racemes or panicle; pedicels 5–12 mm long; calyx ca. 7 mm long, stellate-pubescent; petals ca. 8 mm long, yellow; staminal column 4–5 mm long, stellate-pubescent, the filaments 3–4 mm long; styles 7–8, slender, pallid. Fruits 10–11 mm long, coarsely stellate-pubescent; mericarps 7–8, apically spinescent (the spine up to 2 mm), 3-seeded; seeds ca. 1.8 mm long, glabrous or papillose.

Distribution. Known only from the two collections cited, presumably from intermediate elevations.

ADDITIONAL SPECIMENS EXAMINED. **Colombia**. "de Pandi à Fusagasuga," *Goudot s.n.* (syntype: P as photo F–35450).

In the original description, Triana and Planchon noted a similarity to *Abutilon umbellatum*, here treated as *Pseudabutilon umbellatum*. This view was reiterated by Kearney (1958). However, the relatively large fruits and narrow leaves (broader in the Goudot specimen) indicate a closer alliance to *P. ellipticum*, in my opinion. Robyns (1966) recognized the species as distinct, but cited no specimens other than the type. No modern collections are known.

7. Pseudabutilon depauperatum (Hooker f.) Kearney, Madroño 11: 287. 1952. *Sida depauperata* Hooker f., Trans. Linn. Soc. 20: 232. 1847. *Abutilon depauperatum* (Hooker f.) Andersson ex B. L. Rob., Proc. Amer. Acad. Arts 38: 173. 1902.—TYPE: GALAPAGOS ARCHIPELAGO. Charles Island, Sep 1835, *Darwin s.n.* (holotype: CGE as photo ex CAS!).

Abutilon anderssonianum Garcke in Andersson, Kongl. Svenska Vetenskapsakad. Handl. 1853: 230. 1855.—TYPE: GALAPAGOS ARCHIPELAGO. *Andersson 178* (holotype: S!; isotypes: GOET! K!).

Shrubs or subshrubs to ca. 1 m tall, the stems minutely stellate-pubescent. Leaf blades 3–11 cm long, 2–8 cm wide (often smaller in stressed plants), ovate, basally cordate, crenate-serrate to subentire, acute to acuminate, palmately 5–7-nerved, minutely stellate-pubescent above and beneath; petioles 1–9 cm long (0.5–1 times length of blade), with pubescence like that of stem; stipules 7–10 mm long, 1–2 mm wide, narrowly elliptic. Flowers solitary in the leaf axils, sometimes in axillary umbels, sometimes these in terminal compound inflorescences with reduced leaves; pedicels 1–2 cm long, slender; calyx densely stellate-pubescent, 5–6 mm long; petals 6–9 mm long, yellow, ciliate on margins of claw; staminal column ca. 3 mm long, stellate-pubescent, the filaments borne apically, 1–3 mm long; styles 6–8. Fruits 6–7 mm in diameter, densely stellate-pubescent; carpels 6–8, the carpel body 6–7 mm long with spine 1–2.5 mm long, the lateral wall narrowly rectangular (6 × 2.5 mm), basally reticulate or smooth, 3-seeded, the endoglossum sometimes present or more commonly absent; seeds 2 mm long, obscurely and minutely pubescent.

Distribution. Confined to the Galapagos Archipelago, occurring generally at low elevation.

ADDITIONAL SPECIMENS EXAMINED. **Galapagos Archipelago**. ABINGDON ISLAND: *Snodgrass & Heller 847* (CAS).—ALBEMARLE ISLAND: Iguana Cove, *Snodgrass & Heller 76* (CAS).—BARRINGTON ISLAND: *Snodgrass & Heller 479* (CAS).—CHARLES ISLAND: Post Office Bay, *Howell 8823* (CAS); near Black Beach, *Howell 9352* (CAS).—CHATHAM ISLAND: *Snodgrass & Heller 507* (CAS).—DUNCAN ISLAND: *Snodgrass & Heller 702* (NY).—GARDNER ISLAND: *Snodgrass & Heller 632* (CAS).—INDEFATIGABLE ISLAND (ISLA SANTA CRUZ): 3 mi N of Academy Bay, *Bowman 55* (CAS); Academy Bay, *Fosberg 44721* (MO), *Schimpff 48* (MO).—JAMES ISLAND: James Bay, *Howell 9681* (CAS).—TOWER ISLAND: *Snodgrass & Heller 794* (CAS).

Kearney (1952) and Bates (1971) note that this species is polymorphic and "closely related to if not conspecific with...*Abutilon umbellatum* (L.) Sweet." Bates finds polymorphism in fruit morphology, in that some plants have mericarps with a small endoglossum and mericarp lateral walls that are minutely striate basally; other plants have neither an endoglossum nor striate lateral walls. He concludes that these differences are not sufficient for the recognition of two distinct taxa. Kearney (1952), on the other hand, restricted *P. depauperatum* to those species possessing an endoglossum and basal reticulations, and relegated specimens without an endoglossum to *Abutilon anderssonianum*, which he regarded as a synonym of *A. umbellatum*. Bates's view seems more reasonable and is adopted here.

8. Pseudabutilon ellipticum (Schltdl.) Fryxell, comb. nov. *Abutilon ellipticum* Schltdl., Linnaea 11: 368. 1837. *Sida elliptica* (Schltdl.) Steud., Nomencl. Bot. ed. 2. 2: 577. 1840.—TYPE: MEXICO. Michoacán: Tlalpujahua, 1830, *Keerl s.n.* (holotype: HAL!; isotype: BR!).

Abutilon sidoides Hemsl., Diagn. pl. nov. Mex. 2: 24. 1879, non *Abutilon sidoides* Dalzell & Gibson, 1861. *Abutilon hemsleyanum* Rose, Contr. U.S. Natl. Herb. 10: 123. 1906.—TYPE: MEXICO. San Luis Potosí: *Parry & Palmer 80* (holotype: K!; isotypes: NY! US!).

Abutilon attenuatum B. L. Rob. & Seaton, Proc. Amer. Acad. Arts 28: 104. 1893.—TYPE: MEXICO. Jalisco: near Lake Chapala, *Pringle 4354* (holotype: GH!; isotypes: BM! BR! F as photo F–56142! GOET! K! MASS! MEXU! MIN! MO! MSC! MU! NY–2! P as photo, CTES! PH! TEX! UC! US! VT!).

Abutilon membranaceum Baker f. ex Rose, Contr. U.S. Natl. Herb. 3: 312. 1895.—TYPE: MEXICO. Nayarit: Tepic, 1892, *Palmer 1959* (holotype: BM!; isotypes: F! GH! NY! US!).

Shrubs 1–2 (–3) m tall, the stems coarsely stellate-pubescent, the hairs 0.5 mm long or less. Leaf blades 5–11 cm long, about half as wide, ovate to elliptic, basally truncate (rarely subcordate), serrate, acute or acuminate, palmately 5–7-nerved, with simple appressed hairs above, stellate hairs beneath; petioles 1/4–1/2 the length of the blades, with pubescence like that of stem; stipules 5–9 mm long, subulate or narrowly lanceolate, 1-nerved, often more or less spreading. Flowers in terminal racemes or panicles, these dense or open, more or less above the leaves; pedicels 2–15 mm long; calyx 6–8 mm long, stellate-pubescent, basally rounded, more than half-divided; petals 8–15 mm long, yellow or yellow-orange; staminal column 4–6 mm long, pallid, stellate-pubescent at the base, the filaments ca. 2 mm long; styles 5–7, slender, pallid. Fruits 13–14 mm long, 8–10 mm in diameter, coarsely stellate-pubescent, closely invested by and exceeding the calyx; mericarps 5–7, apically spinose, the spines divergent, 1–4 mm long, 3-seeded, lacking an endoglossum; seeds ca. 2 mm long, minutely squamose.

Distribution. Generally found between 1200–2600 m elevation in Mexico, Guatemala, and Honduras.

REPRESENTATIVE SPECIMENS EXAMINED. **Mexico**. AGUASCALIENTES: near Aguascalientes, *Rose & Painter 7783* (US).—CHIAPAS: Mpio. de Bochil, 3 km al SO de Puerto Cate, *García 594* (CHAPA, NY); Pinada, Siltepec, *Matuda 1905* (ARIZ, NY, TEX).—COLIMA: Rancho El Jabalí, 22 km NNW of Colima, 19°27'N, 103°42'W, *Sanders et al. 11000* (NY, UCR).—DISTRITO FEDERAL: Cerro de Santa Catarina, cerca de Santa Catarina, *Rzedowski 26052* (ENCB, LL, NY); Almella, Tlaltengo, delegación de Tláhuac, *Ventura 3786* (ENCB, NY).—DURANGO: 2 mi W of Revolcaderos, *Breedlove 18926* (CAS, NY); Cerro de los Remedios, Ciudad de Durango, *Patoni 289* (MEXU, NY).—GUANAJUATO: Mpio. de Cortazar, 2 km al NW de La Gavia, *Rzedowski 40946* (ENCB, IEB); Mpio. de Jerécuaro, 3 km al E de Jerécuaro, *Rzedowski 41713* (IEB, NY).—GUERRERO: Montes de Oca, *Hinton et al. 11692* (NY); Mpio. Chilpancingo, camino a Tejocote, 17 km al S de Chilpancingo, *Koch & Fryxell 83266* (CHAPA, NY).—HIDALGO: vicinity of Tepeji del Río, *Fryxell & Bates 2174* (BH, NY); Cañada del Salitre, *Krapovickas & Cristóbal 23475* (CTES, NY); near Tula, *Pringle 9689* (MEXU, NY).—JALISCO: 15–30 km N of Mascota on road to San Sebastián, *Anderson & Anderson 5957* (MICH); Sierra de Manantlán, en el Rancho Lamial, *Calzada & Nieves 9468* (NY, XAL); E of Tizapán El Alto, ca 4 km W of Michoacán state line, on S shore of Lake Chapala, *Fryxell & Bates 2153* (BH, CTES, ENCB, NY); Guadalajara, *Jones 27156* (DS, POM, UC); 12–25 mi SE of Autlán, *McVaugh & Koelz 904* (MICH, NY); near Magdalena, *Pringle 4583* (MEXU, MICH, NY).—MÉXICO: Temascaltepec, Ocotepec, *Hinton et al. 2916* (NY); Cerro de Santa Cruz, Sierra de Guadalupe, *Matuda et al. 29520* (MEXU, NY); Mpio. de Texcoco, cerca de San Juan Ixhuatepec, *Rzedowski 23296* (ENCB, LL, TEX); San Andrés, 5 km al SW de San Cristóbal Ecatepec, *Rzedowski 27642* (ENCB, NY).—MICHOACÁN: Coalcomán, *Hinton 12913* (MICH, NY); Mpio. de Zinapécuaro, SE del Lago Cuitzeo, 1–2 km al E de Coro, *Koch & Fryxell 77397* (CHAPA, LL, NY); Cerro Grande de Cujaruato, al SW de la Piedad, *Rzedowski & McVaugh 555* (LL, MICH, NY); Mpio. de Morelia, Cañada del Río Grande, cerca de Cointzio, *Rzedowski 45377* (ENCB, IEB, MEXU, TEX).—NAYARIT: Tepic, en 1892, *Palmer 1959* (BM, F, GH,

NY, US); Mpio. Tepic, 4 km al SW del Cuarenteño, brecha al Cora (21°26'N, 104°56'W), *Tenorio et al. 16961* (MEXU, NY).—Nuevo León: Zaragoza, *Hinton et al. 23481* (TEX).— Oaxaca: Mpio. Tlacolula, 5 km N of Díaz Ordaz, on road to Cuajiimoloyas, *Hill 1852* (NY); Mpio. San Juan Mixtepec, Cerro Metate a 17 km NO de San Juan Mixtepec, *Reyes 1376* (MEXU, NY).—Puebla: Cerro de la Yerba, vic. of San Luis Tultitlanapa, *Purpus 2604* (NY); Mpio. Caltepec, Cerro El Gavilán, al SE de Caltepec, *Tenorio & Romero de Tenorio 7734* (MEXU, NY, TEX).—Querétaro: La Trinidad, mina de opales, *Arguëlles 2007* (MEXU, NY); Mpio. de Cadereyta, 3 km al S de San Javier, *Fernández 3053* (ENCB, IEB, NY).—Sinaloa: Puerto a Tamiapa, *Gentry 5840* (ARIZ); 1 mi S of El Palmito, 23°36'N, 105°51'W, *Sanders et al. 4372* (NY, UCR).—Zacatecas: 55 mi N of Fresnillo, 5 mi N of Río Grande, *Rollins & Tryon 58264* (LL). **Guatemala**. Chimaltenango: near Parramos, *Standley 59874* (F, NY).—Quiché: Nebaj, *Skutch 1729* (NY); El Molino, 4 km from Chichicastenango, *Molina et al. 30299* (NY).—Sacatepéquez: Cerro de la Cruz, above Antigua, *Standley 63314* (F, NY).—Sololá: 3–5 km W of Panajachel, *Williams et al. 25299* (F, NY). **Honduras**. Morazán: Mt. Uyuca, *Molina 25919* (NY).

9. Pseudabutilon glomeratum Fryxell, sp. nov.—Type: Bolivia. Chuquisaca: Luis Calvo Prov., 80 km al E de Boyuibe, 20°30'S, 62°10'W, *Killeen, Vargas, & Mostacedo 4198* (holotype: TEX!; isotypes: LPB! MO!).

Suffrutices dense stellato-pubescentes; laminis foliorum ovatis; floribus ignotis; fructibus in fasciculis densis axillaribus quasi sessilibus; calycibus ad dimidium divisis; fructibus dense pubescentibus; mericarpiis 8 unumquidque apiculo 1–2 mm longo, per endoglossum partialem fimbriatum in 2 cellulis diviso, cellula inferior lateraliter reticulata.

Subshrubs ca. 1 m tall, the stems densely stellate-pubescent, the hairs ca. 0.5 mm long. Leaf blades ovate, basally truncate to cordate, crenate, palmately 7–9-nerved, densely stellate-pubescent beneath, the hairs 0.5–1 mm long, more sparsely pubescent above, the hairs often bi- and trifurcate and antrorsely oriented, ca. 0.5 mm long; petioles 1–2.5 cm long, densely pubescent like stems; stipules subulate, 2–5 mm long, pubescent. Flowers unknown. Fruits in dense axillary clusters, sometimes forming a terminal spike-like inflorescence; pedicels obsolete, the fruits essentially sessile; calyx 7–8 mm long, densely stellate-pubescent, ca. half-divided, the lobes triangular or somewhat acuminate. Fruits 7–8 mm in diameter, densely pubescent; mericarps ca. 8, ca. 6 mm long (excluding spine), divided by a constriction and also by a partial, fimbriate endoglossum into a lower and an upper cell, the lower cell 1-seeded and laterally reticulate (somewhat similar to mericarps of *Sphaeralcea*), the upper cell smooth and 2-seeded, with an apical spine 1–2 mm long; seeds 2 mm long, sparsely verruculose.

Distribution. Known only from two collections from Bolivia.

Additional Specimen Examined. **Bolivia**. Chuquisaco: Prov. Oropeza, de Sucre pasando Yotala, entrando por la quebrada de Ñujchu, *Beck 8881* (US).

The new species is notable for its obsolete pedicels and hence glomerulate inflorescence, and for its fimbriate endoglossum.

10. Pseudabutilon leucothrix Fryxell, sp. nov.—Type: Bolivia. Santa Cruz: Ñuflo de Chávez Prov., Lomerio, 12 km al N de la comunidad Las Trancas Area de estudio del proyecto "BOLFOR," Las Trancas–95, 16°31'13"S, 61°50'47"W, 450 m, 13 Jun 1995, *Mamani 778* (holotype: TEX!; isotypes: MO! USZ!).

Suffrutex 1–2 m altus, caulibus et foliis sparse et minutissime puberulentibus; calycibus et pedicellis fructibusque pilis albis tortis arachnoideis; corollis albis; inflorescentiis axillaribus racemiformibus apertis; mericarpiis 5, sine endoglosso, spinis apicalis 2 mm longis.

Subshrubs 1–2 m tall, the stems very minutely and sparsely puberulent except in the inflorescence, where in addition there are scattered straight setae 2–5 mm long and dense curly subarachnoid whitish hairs ca. 0.5 mm long. Leaf blades up to 13 cm long, 11 cm wide, but gradually reduced upwards and very small (to bractlike) in the inflorescence, broadly ovate, basally cordate, crenate or serrate, short-acuminate, palmately 5–7-nerved, somewhat discolorous, with extremely minute stellate hairs (less than 0.1 mm diameter), those of the upper surface sparser than those of the lower surface; petioles 1–6 cm long, with pubescence like that of the stems; stipules 8–9 mm long, 1 mm wide, liguliform, very minutely stellate-pubescent. Flowers borne in inflorescences in the axils of the upper leaves, these becoming aggregated into a compound terminal inflorescence, which is made up of axillary racemes with subumbellate parts; pedicels 3–15 mm long, densely covered with fragile subarachnoid whitish hairs and with scattered straight setae 2–5 mm long; calyx rounded at base, ca. 5 mm long, covered with subarachnoid hairs, less than half-divided, the lobes apiculate; corolla white, flowers otherwise unknown. Fruits 6–7 mm in diameter, yellowish, densely covered with whitish subarachnoid hairs; mericarps 5, the mericarp body 4 mm long, each with two spines 2 mm long, 3-seeded, lacking an endoglossum; seeds 2 mm long, obscurely pubescent.

Distribution. Bolivia at elevations of 250–750 m in semideciduous forest.

Additional Specimens Examined. **Bolivia**. Santa Cruz: Velasco, Parque Nacional Noel Kempff, 1 km al S del Río Itenez, 13°37'0"S, 60°54'0"W, 250–750 m, *Toledo 28* (MO, TEX).

The new species is named for the distinctive pubescence found in the inflorescence. The open structure of the terminal inflorescence is also distinctive.

11. Pseudabutilon longepilosum R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 107. 1908.—Type: Argentina. Catamarca: Puntilla de Villavil, *White s.n.* (syntype: BM!); Prov. Rioja: *Stuckert 9341* (syntype: S!).

Subshrubs, the stems minutely tomentose and with long simple spreading hairs. Leaf blades to 5 cm long, 3.5 cm wide, ovate or rotund-ovate, basally cordate, serrate, acute, palmately 7-nerved, stellate-pubescent above and beneath and with long appressed simple hairs on upper surface; petioles ca. 2 cm long (half length of blades), with pubescence like that of stem; stipules filiform, 7–8 mm long, pilose. Flowers axillary, solitary (or paired); pedicels 1 cm long (in flower) to 1.5–4 cm long (in fruit), with pubescence like that of stem; calyx 6–8 mm long (slightly accrescent in fruit), tomentulose and pilose, the lobes 4–5 mm long, 2.5 mm wide; petals 7–9 mm long, whitish; staminal column 1.5 mm long, sparsely pilose, the filaments 1–1.5 mm long. Fruits 7 mm in diameter, whitish stellate-pubescent; mericarps 6–8, ca. 6 mm long, with apiculum 2 mm long, 3-seeded, divided into two cells by an endoglossum; seeds 1–1.5 mm long, subreniform. [Adapted from original description.]

Distribution. Northwestern Argentina, apparently known only from the two syntypes.

12. Pseudabutilon nigropunctulatum (Ulbr.) R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. ser. 3, 24(2): 11. 1947. *Abutilon nigropunctulatum* Ulbr., Jahrb. Bot. Syst. 54 (Beibl. 117): 57. 1916.—TYPE: PERU. Ad viam ferream a Lima oppido ad Oroyam gerentem prope vicum San Bartolomé dictum, *Weberbauer 5301* (holotype: B as photo F–9281!; isotypes: F! GH! US!).

Shrubs 1.5 m tall, the stems very minutely and sparsely farinose-pubescent (hairs 0.1 mm in diameter or less). Leaf blades 5–8 cm long, 2.5–4.5 cm wide, ovate, basally truncate to cordate, serrate, acuminate, palmately 5–7-nerved, farinose-pubescent above and beneath; petioles 1–2.5 cm long; stipules subulate, 1–2 mm long. Flowers axillary and aggregated into terminal panicles; pedicels 1–3 cm long, slender, spreading; calyx 5 mm long, ca. half-divided or less, densely brownish puberulent; petals white, 5–6 mm long, glabrous except pubescent on claws; staminal column 4–5 mm long, the filaments short; styles 5–6. Fruits 6–7 mm in diameter, with pubescence like calyx; mericarps 5–6, apically apiculate (the spines 1–1.5 mm long), 6 mm tall, 3-seeded, with prominent endoglossum separating lowermost seed from upper two seeds; seeds 2 mm long, obscurely pubescent.

Distribution. Peru at elevations of 1300–2300 m.

ADDITIONAL SPECIMENS EXAMINED. **Peru.** APURIMAC: Prov. Abacay: Río Pachachaca, 20 km N of Abancay, *Stork et al. 10524* (MO).—LIMA: carr. Lima a Oroya, Km 70, *Krapovickas 8260* (CTES, NY); San Bartolomé, *López 3759* (CTES); Matucanos, *López 4261* (CTES).—CAJAMARCA: Prov. Cajamarca, road to Chilete, 5.5 km below San Pablo, *Hutchison & Wright 5086* (UC, NY); Prov. Contumasá: Cascas, *Raimondi 7573* (CTES).—LA LIBERTAD: Prov. Trujillo: Samne, Plaza Pampa, *de Cevasco s.n.* (CTES).

13. Pseudabutilon orientale (Standl. & Steyerm.) Fryxell, comb. nov. *Abutilon orientale* Standl. & Steyerm., Publ. Field Mus. Nat. Hist., Bot. Ser. 23: 173. 1944.—TYPE: GUATEMALA. Zacapa: between Agua Blanca and Cumbre de Chiquimula, *Standley 74420* (holotype: F!).

Abutilon demissum Fryxell, Brittonia 32: 263. 1980.—TYPE: MEXICO. Oaxaca: Mpio. de Pochutla: 1–2 km al oeste de Puerto Angel, *Koch & Fryxell 78402* (holotype: CHAPA!; isotypes: BH! BM! CAS! CTES! ENCB! F! K! MEXU! MO! NY! TEX! WIS!).

Arching or sprawling subshrubs to 1 m tall, sometimes scandent, the branch tips drooping, the stems minutely stellate-pubescent, sometimes also with long spreading hairs. Leaf blades 6–8 cm long (occasionally longer, progressively reduced upward), 4–7 cm wide (occasionally wider), ovate, basally cordate, crenate or serrulate, acuminate, with minute stellate and bifurcate hairs above, with slightly larger and denser hairs beneath, palmately 5-nerved; petioles ca. half the length of the blade on lower leaves, progressively shorter upward, with pubescence similar to that of stem; stipules 4–8 mm long, subulate, pubescent. Flowers usually solitary in the leaf axils; pedicels 4–15 mm long, articulated ca. 2 mm below the flower, with both stellate and some glandular hairs; calyx 4 mm long, basally rounded, shallowly 5-lobed, with both stellate and glandular hairs; petals 5–7 mm long, yellow; staminal column 2–3 mm long, pallid, stellate-pubescent, the filaments 1.5 mm long; styles 5 (–6), slender, glabrous. Fruits 5–6 mm long, about as

wide, minutely stellate- and glandular-pubescent; mericarps 5 (–6), apically spinescent, the spine ca. 1.5 mm long, 3-seeded, somewhat constricted basally, completely divided internally by a broad double endoglossum, the lower cell 1-seeded, the upper cell 2-seeded; seeds ca. 1.6 mm long, glabrous.

Distribution. Western coastal Mexico and Guatemala at elevations below 200 m, in seasonally dry deciduous forest.

Additional Specimens Examined. **Mexico**. Colima: Mpio. Manzanillo: 1.5 km al NE de Las Juntas de Abajo, brecha a Las Juntas de Arriba, *Santana & Cervantes 1168* (IBUG).—Guerrero: Mpio. Petatlán: 28 km al SO de Zihuatanejo, *Koch & Fryxell 82150* (CHAPA, F, NY); Mpio. Acapulco: terracería a Ocotillo, 2 km al O del Km 26, carr. Acapulco–Chilpancingo, *Koch & Fryxell 82232* (CHAPA, NY).—Jalisco: Mpio. La Huerta: Rancho Cuixmala, 19°27'N, 104°59'W, *Lott et al. 4058* (NY, UCR), *Lott et al. 4146* (CAS, NY, TEX, UCR); near Estación de Biología Chamela, *Magallanes 3917* (MEXU, NY).—Oaxaca: Mpio. Chahuites: 2.5 mi W of Chiapas state line (W of Arriaga), *Fryxell & Lott 3376* (CAS, MEXU, NY); Mpio. Juquila: 34 km al NO de Puerto Escondido por la carretera a Pinotepa Nacional, *Koch et al. 79454* (CHAPA, NY); Mpio. San Pedro Mixtepec, terracería a San Gabriel Mixtepec, 6.5 km al N de Puerto Escondido, *Koch et al. 79460* (CHAPA, NY); Mpio. Sta. María Huatulco: carretera a Salina Cruz, *Koch et al. 79538* (CAS, CHAPA, NY).—Sinaloa. Mazatlán, *González-Ortega 6785* (US).

14. Pseudabutilon pintoi Monteiro, Portugal. Acta Biol. B, 12: 142. 1973.—Type: Brazil. Bahia: Cruz das Almas, *Pinto 50-35* (holotype: RBR n.v.; isotypes: CTES [fragment]! IAL n.v.).

Subshrubs 0.5–1 m tall, the stems stellate-tomentulose. Leaf blades 3–5 cm long, 2.5–4 cm wide, ovate to broadly ovate, basally cordate, irregularly crenate, acute or acuminate, stellate-pubescent above and beneath, the hairs of the upper surface smaller and sparser; petioles 1–1.8 cm long (1/3 length of blade), densely stellate-tomentose; stipules narrowly linear, 5–7 mm long. Flowers and fruits axillary, solitary; pedicels (in fruit) 3–4 mm long, stellate-pubescent; calyx (in fruit) 8 mm long, the lobes 5 mm long, 4 mm wide, yellowish tomentose; corolla, staminal column, and styles unknown. Fruits globose, yellowish tomentose; mericarps 10, 8 mm long (including 1 mm spine), divided into two cells by an endoglossum (1 seed in lower cell, 2 in upper cell); seeds reniform, sparsely and minutely pubescent. [Adapted from original description.]

Distribution. With certainty known only from the type collection, from the state of Bahia, Brazil.

In describing this species, Monteiro relates it to *P. callimorphum*, but distinguishes it in having very short pedicels and 10-parted fruits. It is also distinguished by its geographical isolation from other species of *Pseudabutilon*. On geographical grounds, another collection from Bahia (Rio São Francisco frente a Ibotirama, 12°11'S, 43°13'W, *Krapovickas et al. 37884*, CTES, NY) may belong here, although it was originally placed in *P. virgatum*.

15. Pseudabutilon scabrum (C. Presl) R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 103. 1908. *Wissadula scabra* C. Presl, Reliq. Haenk. 2: 117. t. 69. 1835.—Type: Mexico. sine loc., *Haenke s.n.* (holotype: PR!).

Wissadula paniculata Rose, Contr. U.S. Natl. Herb. 5: 178. 1899. *Pseudabutilon paniculatum* (Rose) R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 104. 1908.—Type: Mexico. Sinaloa: Ymalá, 1891, *Palmer 1743* (holotype: US!; isotypes: BM! NY! US!).

Abutilon barrancae M. E. Jones, Contr. W. Bot. 18: 57. 1933.—TYPE: MEXICO. Jalisco: Guadalajara, La Barranca, *Jones 27162* (lectotype, designated by Fryxell, 1988: POM–192430!; isolectotypes: BM-2! NY! POM–193309! UC! US!).

Pseudabutilon inornatum Standl. & Steyerm., Publ. Field Mus. Nat. Hist., Bot. Ser. 23: 15. 1943.—TYPE: GUATEMALA. Guatemala: near Amatitlán, *Standley 61425* (holotype: F as photos F–56242! F–56243!; isotype: US!).

Shrubs 1–2 (–3) m tall, minutely stellate-pubescent, the older branches becoming glabrate. Leaf blades 8–12 cm long, 2.5–10 cm wide, ovate, basally truncate to somewhat cordate, obscurely serrate, acute to acuminate, minutely pubescent, the hairs stellate and bifurcate; petioles 1/3–1/2 as long as the blades; stipules ca. 3 mm long, subulate. Inflorescence racemiform or paniculate, simple or more often branched; flowers short-pedicellate or subsessile; calyx 3–6 mm long, ca. half-divided, basally rounded and enclosing the base of the fruit, the lobes triangular; petals 5–10 mm long, yellow; staminal column 3–5 mm long, sparsely pubescent to glabrous, the filaments almost as long as the column; styles 8–10, slender, pallid. Fruits 4–6 mm long, about as wide, stellate-pubescent; mericarps 8–10, usually 3-seeded, apically rounded to acute, basally constricted, sometimes laterally reticulate at base, with double internal partition (endoglossum); seeds 2 mm long, papillate.

Distribution. Mexico to Honduras at elevations of 200–1200 m, in seasonally dry deciduous forests or in more open habitats.

REPRESENTATIVE SPECIMENS. **Mexico**. CHIAPAS: Mpio. Amatenango Frontera, along Río Cuilco between Nuevo Amatenango and Frontera Comalapa, *Breedlove 41774* (CAS, NY); Mpio. Arriaga, at La Mina microwave station, *Breedlove 56295* (CAS, NY); Mpio. Tuxtla Gutiérrez, on road to Chicoasen, *Fryxell & Lott 3236* (MEXU, NY).—COLIMA: forested hills 2–6 km SE of La Manzanilla, above Bahia Tenacatita, *McVaugh 25042* (MICH, NY); Mpio. Manzanillo, 1.5 km al NE de Las Juntas de Abajo, *Santana & Cervantes 1174* (IBUG, NY, TEX).—GUERRERO: Mpio. La Unión, 8 km al N de La Unión por la terracería a Coahuayutla de Guerrero, *Koch & Fryxell 83119* (CHAPA, NY, TEX); Mpio. La Unión, 86.5 km al NE de Zihuatanejo camino a Cd. Altamirano, *Martínez & Barrie 5479* (MEXU, NY).—JALISCO: 2.5 km al W de Melaque, Mpio. Cihuatlán, *Cuevas et al. 555* (IBUG, NY); Mpio. Tonalá: Barranca de San Gaspar, *Guerrero et al. 392* (WIS); vicinity Quimixto, *Mexia 1239* (BM, DS, F, US); La Barranca de Guadalajara, *Pringle 1721* (BM, K, MICH, NY, S, TEX, US).—NAYARIT: Mpio. San Blas, Km 19 de la autopista Tepic–Mazatlán (21°34'N, 105°04'W), *Téllez et al. 12703* (MEXU, NY); Mpio. Xalisco, Km 12 del camino de Xalisco al Malinal (21°37'N, 104°58'W), *Téllez & Bojorquez 12619* (MEXU).—OAXACA: 71.4 mi NW of Salina Cruz on Hwy 200, *Fryxell & Lott 3397* (MEXU, NY); Mpio. San Miguel Chimalapa: entre 12 y 15 km de la carretera Juchitán–Tuxtla Gutiérrez, 160–220 m, *Koch & Fryxell 78349* (CHAPA, NY, TEX); Mpio. Ixtaltepec, al S de Mazahua, 13 km al NE de Ventosa, 16°40'N, 94°54'W, *Martínez 1260* (MEXU, NY); 5 km al E de Teotitlán del Camino, sobre la carr. a Huautla, *Rzedowski 37072* (ENCB, NY); ladera S del Cerro de Guiengola, *Torres et al. 673* (MEXU, NY).—PUEBLA: Coxcatlán, *Purpus 4186* (NY).—SINALOA: 23 km W of San Ignacio, *Fryxell & Bates 2117* (BH, NY); Imalá, *Gentry 4966* (ARIZ, NY); Cerro Tecomate, W of Pericos, *Gentry 5726* (ARIZ, TEX).—SONORA: Mawarichi Arroyo, Río Mayo, *Gentry 1317* (ARIZ, TEX); 2.7 mi W of Santa Fé de Yecora, 28°23'N, 109°19'W, *Goldberg 77–53* (ARIZ); Sierra de la Cebollita, 1 mi S of Nuri on the road to Tesopaco, 28°6'N, 109°19'W, *Sanders 3703* (NY, UCR); La Higuera, ca. 7 mi N of Alamos on the San Bernardo road, 27°05'N, 108°57'W, *Van Devender & Van Devender 90–591* (ARIZ, NY).—VERACRUZ: Zacuapan and vicinity, Río de Santa María, *Purpus 2239* (GH, MO, NY, UC); Mpio. Dos Ríos, Plan del Río, *Ventura 2655* (ARIZ, ENCB, LL, NY, TEX); Mpio. Dos Ríos: La Cumbre, *Ventura 12032* (CHAPA, MEXU, NY). **Honduras**. EL PARAÍSO: Sierra de la Villa Santa, Río California, *Molina et al. 31252* (NY).

16. Pseudabutilon stuckertii R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 107. 1908.—SYNTYPES: ARGENTINA. Tucumán: Vipos, *Lillo 2299*; La Rioja: Diana, *Schmädke 13225* (CORD); Córdoba, *Stuckert 1029* (CORD, S); Córdoba, *Stuckert 12983*; Córdoba, *Fielding s.n.* (BM).

Pseudabutilon callimorphum var. *friesii* (Hassl.) R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 106. 1908. *Wissadula callimorpha* var. *friesii* Hassl., Bull. Herb. Boissier, sér 2, 7: 457. 1907. *Wissadula pedunculata* R. E. Fr., Arkiv Bot. 6(2): 12. t. 2. figs. 1–5. 1906.—TYPE: BOLIVIA. Gran Chaco, Fortin Crevaux ad Río Pilcomayo, 16 Apr 1902, *Fries 1572* (holotype: S!).

Subshrubs 0.5–1.5 m tall, the stems minutely and densely stellate-pubescent. Leaf blades 3–7 cm long, 2–5 cm wide, ovate, basally cordate, prominently serrate, acute, palmately 5–7-nerved, softly stellate-pubescent above and beneath; petioles 1–2.5 cm long, with pubescence like that of the stem; stipules narrowly lanceolate, 4–10 mm long, pubescent, persistent. Flowers solitary or paired in the leaf axils, sometimes forming a terminal inflorescence; pedicels 2–5 cm long, slender, stellate-pubescent; calyx 5–7 mm long, about half-divided, densely stellate-pubescent and with a few pilose hairs 3 mm long; petals 8–10 mm long, yellow; staminal column 2–3 mm long, minutely pilose, the filaments ca. 1.5 mm; styles 6–7. Fruits 7–9 mm in diameter, densely stellate-pubescent; mericarps 7–8, each 6 mm long, apically apiculate (apiculum 0.5–1 mm long or shorter), 3-seeded, with endoglossum above the lowermost seed; seeds ca. 2 mm long, minutely pubescent.

Distribution. Paraguay, Bolivia, and northern Argentina.

ADDITIONAL SPECIMENS EXAMINED. **Bolivia**. TARIJA: Prov. Gran Chaco, 10 km S de Palmar Grande, camino Yacuiba–Villa Montes, *Krapovickas & Schinini 31102* (CTES, NY). **Paraguay**. BOQUERÓN: 14 km N de Filadelfia, *Krapovickas & Cristóbal 44251* (CTES, TEX).—CHACO: Agua Dulce, 20°14'S, 60°7'W, *Schinini & Bordas 18082* (CTES, MO).—NUEVA ASUNCIÓN: Ruta Trans-Chaco, 21°26'S, 61°25'W, *Schinini & Bordas 16407* (CTES, MO). **Argentina**. CATAMARCA: Depto. La Paz, El Bello, *Brizuela 836* (CTES); Depto. Andagalá, 9 km SE of Andagalá, via the road to Cuesta de la Chilca, *Cantino 305* (ARIZ, GH).—CHACO: Depto. Tapenaga Enrique Urien, Campo Bonazzola, *Rodrigo 2676* (NY); Depto. 1° de Mayo, Colonia Benítez, *Schulz 11121* (CTES, NY); Depto. 12 de Octubre, Estancia San José, General Pinedo, *Schulz 11288* (CTES).—CÓRDOBA: Depto. Santa María, Cuesta San Roque, *de la Sota 1395* (MO).—CORRIENTES: Depto. Mercedes, Paso Lucero, Río Corrientes, *Krapovickas & Cristóbal 14763* (CTES).—FORMOSA: Depto. Pirani, Palo Santo, *Maruñak et al. 423* (CTES, NY); Depto. Pilcomayo, Laguna Verá, *Morel 5007* (CAS); Depto. Patiño, Las Lomitas, *Schinini & Pire 24214* (CTES, NY).—JUNÍN: San Luis, Quebrada del Tigre, entre Santa Rose y Bañado de Cautana, *Hunziker & Cocucci 14867* (CTES).—LA RIOJA: Depto. Gob. Cordillo, Campo Experimental del INTA, *Biurron 1433* (CTES); entre Patquía y Capital, *Dawson & Guarrera 3197* (CTES); Depto. Rosario, Vera Peñaloza, Río Totoral, a 5 km de Chelco, *Hunziker et al. 14163* (CTES).—SALTA: Depto. Güemes, Juramento, *Krapovickas & Schinini 30431* (CTES, MO).—SANTIAGO DEL ESTERO: Depto. Robles, Beltran, *García 719* (NY).—TUCUMÁN: entre Las Tejas y Tucumán, *Castiglioni & Ragonese 672* (CTES); Depto. Trancas, Vipos, *Krapovickas & Cristóbal 18377* (CTES, NY).

17. Pseudabutilon thurberi (A. Gray) Fryxell, comb. nov. *Abutilon thurberi* A. Gray, Mem. Amer. Acad. Arts n.s. 5 (Pl. Thurb.): 307. 1854.—TYPE: MEXICO. Sonora: Magdalena, *Thurber 911* (holotype: GH as photo US!; isotypes: K! MO! NY!).

Pseudabutilon sonorae Wiggins, Contr. Dudley Herb. 3: 70. 1940.—TYPE: MEXICO. Sonora: along Río de los Alisos, 31 mi S of Nogales, *Wiggins 7034* (holotype: DS!).

Erect subshrubs (sometimes decumbent), the stems sparsely setose (the hairs 2–3 mm long), otherwise glabrescent. Leaf blades 3–10 cm long, 3–6 cm wide, ovate, coarsely crenate-serrate, basally shallowly cordate, acuminate, pedately 7-nerved, above with widely scattered appressed simple hairs (1–2 mm) and beneath with even fewer such hairs (primarily on the veins), occasionally with stellate hairs; petioles 1/2–1 times the length of the blade, with pubescence like that of

stem; stipules 3–11 mm long, 1 mm wide, linear, prominently 1-nerved, sparsely setose, more or less spreading, persistent. Flowers solitary in the leaf axils; pedicels 0.5–2.5 cm long, slender, pilose, articulated ca. 2 mm below the flower; calyx 4–5 mm long in flower, to 7 mm long in fruit, basally rounded, with minute glandular and a few stellate hairs and prominently setose (hairs 1–3 mm long), ca. half-divided, the lobes ecostate, ovate-acuminate; petals 4–6 mm long, yellowish or yellow-orange; staminal column 2–3 mm long, glabrous, the filaments ca. 2 mm long; styles 5. Fruits subequal to calyx, 5–6 mm long and wide, hispidulous, straw-colored at maturity; mericarps 5, usually 3-seeded, with an endoglossum, with scattered stellate pubescence, apically spinescent, the spine 2–3 mm long; seeds 2–3 mm long, sparsely stellate-puberulent.

Distribution. Southern Arizona and northern and central Sonora at elevations of 900–1100 m.

Additional Specimens Examined. **U.S.A.** Arizona: Pima County, Baboquivari Canyon, 3500 ft, *Gilman 35* (ARIZ), *Kearney & Peebles 14970* (ARIZ, CAS, NY); Fresnal, *Peebles 8987* (ARIZ), *Peebles 9060* (ARIZ). **Mexico**. Sonora: 10 mi S of Mazatan, between Colorado and Mazatan, *Wiggins & Rollins 369* (ARIZ, LL, MO, NY, US); 15.3 mi by road S of Sasabe, 31.3°N, 11.7°W, 900 m, *Hastings & Turner 72–23* (ARIZ).

In describing *Abutilon thurberi*, Gray did not note the presence of an endoglossum, but this structure was described and illustrated by Wiggins for *Pseudabutilon sonorae*. Presumably, Gray merely overlooked a feature not then known to be significant.

18. Pseudabutilon umbellatum (L.) Fryxell, comb. nov. *Sida umbellata* L., Syst. Nat. ed. 10. 1145. 1759. *Abutilon umbellatum* (L.) Sweet, Hort. Brit. ed. 1, 1: 53. 1826.—Type: Jamaica. *Browne s.n.* (holotype: LINN–866.16!).

Shrubs 1–2 m tall, the stems densely stellate-pubescent, sometimes also with long simple hairs. Leaf blades 6–12 cm long, broadly ovate to weakly 3-lobulate, basally cordate, serrate, acute or acuminate, minutely pubescent with stellate hairs beneath and frequently bifurcate hairs above, more densely pubescent beneath, palmately 7–9-nerved; petioles 1/2–1 times the length of the blade; stipules 8–10 mm long, lanceolate. Flowers in few-flowered axillary umbels, these often aggregated into a terminal compound inflorescence; peduncles 1–5 cm long, the pedicels usually 1–2 cm long; calyx 6–8 mm long, basally rounded, half-divided, the lobes triangular, stellate-pubescent and sometimes prominently hirsute, the hairs 3–4 mm long; petals 6–8 mm long, yellowish; staminal column 3–4 mm long, the filaments 1–2 mm long; styles 6–8. Fruits 5–9 mm long and wide, hirsute, with divergent apical spines 2–4 mm long; mericarps 6–8, 3-seeded, lacking an endoglossum; seeds 2 mm long, papillate.

Distribution. Widely distributed from Mexico and the West Indies to Central America and northern South America, generally at relatively low elevation.

Representative Specimens. **Bahamas**. Long Island: Clarence Town, *Correll 48150* (FTG, LL, NY).—Grand Turk: Cockburn Town, *Correll 46476* (FTG, NY).—Great Inagua: about Matthew Town, *Correll 47439* (FTG, NY). **Cuba**. Guantanamo Bay, Oriente, *Britton 2169* (NY); Loma del Gato, Cobre Range of Sierra Maestra, *Bro. León et al. 9807* (NY); Santa Clara, María Antonia at Río Banao, *Ekman 16223* (NY, S). **Haiti**. Massif des Matheux, St. Marc, Cap St. Marc, *Ekman 6669* (NY, S); Depto. de l'Artibonite, vicinity of Gros Morne, *Leonard 9964* (NY). **Dominican Republic**.

Prov. Azua: entre la entrada a Puerto Tortuguero y Hatillo, 18°25'N, 70°27'W, *García et al. 66* (NY, TEX); Prov. Peravia, NE of Galeón, 18°19N, 70°14'W, *Mejía & Zanoni 7008* (NY, TEX); Prov. Azua, 3 km W of Cruce de Ocoa, 18°21'N, 70°29'W, *Thompson et al. 9397* (CM, NY). **Jamaica**. vicinity of Kingston, *Britton & Hollick 1725* (NY); Port Royal, *Proctor 31091* (LL, NY); Clarendon, 1 mi SE of Portland Cottage, *Proctor 31131* (LL); Lititz, 17°55'N, 77°36'W, Aug 1847, *Wolle s.n.* (CM, NY). **Puerto Rico**. Island of Culebra, *Britton & Wheeler 136* (NY); Mona Island, *Britton et al. 1818* (NY); Coamo Springs, *Britton & Britton 9478* (NY); Maruca, Guánica, *Liogier et al. 33666* (NY). **Virgin Islands**. St. Thomas: near Charlotte Amalie, *Rose 3176* (NY, US).—St. Croix: Areria's Hope, *Thompson 193* (NY).—Virgin Gorda: Valley, *Fishlock 183* (NY), *Fishlock 264* (NY).—Tortola: Reef Island, *Britton & Shafer 870* (NY). **Lesser Antilles**. Grenada: Grand Anse, Dec 1904, *Broadway s.n.* (NY); Carriacou, *Howard 10827* (NY).—St. Barthélemy: Camaruche, *Questel 731* (NY). **Trinidad**. W end of Monos Island, *Britton et al. 2722* (NY); Chachacare, 25 Jan 1921, *Broadway s.n.* (NY). **Curaçao**. Soto, *Arnoldo-Broeders 3645* (NY); without locality, *Boldingh 4811* (NY); Banks, Patrick, *Britton & Shafer 3068* (NY). **Mexico**. Jalisco: Sierra de Manantlán, 2–4 km E of Zapotillo, 19°38'20"N, 104°24–25'W, *Cochrane et al. 12312* (WIS); barranca near Guadalajara, *Rose & Painter 7355* (US).—Nayarit: Km 20–40 del camino de terracería hacia la Presa de Aguamilpa, *Téllez 11193* (MEXU, NY).—Oaxaca: 74 mi SE of Oaxaca, *Fryxell 1148* (CAS, CTES, NY, TEX); Mpio. Ixtaltepec, 25 km al N de Juchitan, *Koch et al. 78289* (CHAPA, NY).—San Luis Potosí: Mpio. de Rioverde, S of San Diego near Presa San Diego, *Fryxell 3789* (NY).— Tamaulipas: Mpio. San Fernando: 5–10 km S of Carboneras on road to Punta Piedras, *Fryxell 3664* (CHAPA, ENCB, K, MEXU, MICH, MO, NY, TEX, US); Mpio. Soto La Marina, 27 km E of Soto La Marina on road to La Pesca, *Fryxell 3686* (CHAPA, CTES, ENCB, MEXU, MICH, MO, NY, TEX, US); Mpio. Aldama: ca. 40 km NE of Aldama near Barra de Tordo, *Fryxell 3695* (CHAPA, ENCB, GB, MEXU, MICH, MO, MSC, NY, TEX, US).—Veracruz: 9 km de Tampico hacia Cd. Valles, *Chiang 269* (MEXU); near Puente Nacional *Fryxell & Bates 858* (BH, CTES, NA, NY); Rancho Remudadero, *Purpus 14296* (A, F, NY, UC); Mpio. Puente Nacional: Pachuquilla, *Ventura 9425* (ENCB, MEXU, NY).—Yucatán: Cueva de Sihunchen, 15 mi N of Muna, *Butterwick 131* (LL). **Nicaragua**. Granada: 8 km N de Granada on road to Paso de Panaloya, *Stevens 4623* (MO, NY).—Managua: Km 14 carr. a Laguna de Jiloa, 12°10'N, 86°21'W, *Moreno 3566* (MO, NY); lado O de Laguna de Jiloá, *Sandino 265* (MO, NY).—Estelí: sobre el camino a Limay, 13°12'N, 86°36'W, *Moreno 2014* (MO, NY); on road to Pueblo Nuevo, 13°25'N, 86°25'W, *Stevens 5747* (MO, NY).—Matagalpa: SW slopes of Cerro El Pilón, 12°37'N, 86°02'W, *Stevens 9430* (MO, NY).—León: Lago de Managua, Isla Momotombito, *Araquistain & Moreno 1057* (MO, NY); El Transito, Estero El Guineo y alrededores, 12°03'N, 86°42'W, *Moreno 4797* (MO, NY).—Rivas: 18 km al S de San Juan del Sur, *Araquistain & Moreno 1264* (MO, NY); Peñas Blancas, 1 km N of Costa Rican boundary, *Atwood 1808* (MO, NY). **Venezuela**. Isla Margarita, *Miller & Johnston 152* (NY).—Aragua: Maracay, *Krapovickas 15571* (CTES, NY).—Falcón: Coro, *Wingfield 5033* (CORO, NY).—Bolívar: Ciudad Bolívar, *Holt & Gehringer 17* (NY).—Distrito Federal: Pto. La Cruz, Hacienda Panarigua, *Pittier 11652* (NY).—Cojedes: Depto. El Pao, Paraima, *Trujillo 5438* (MY, NY).—Lara: Depto. Palovecino Agua Viva via Terepaima, *Burandt 2434* (NY); Barquisimeto, *Saer 207* (NY).—Mérida: Distr. Sucre, Las Gonzales–San José road, ca. 20 km SW of Mérida, 8°25'N, 71°20'W, 9–10 Nov 1990, *Dorr & Barnett 7653* (NY, TEX).—Miranda: SO del Valle de Caracas, 10°30'N, 66°53'W, *Ramírez 1049* (NY).—Zulia: Jardin Botánico de Maracaibo, *Bunting 13108* (NY). **Colombia**. Bolívar: vicinity of Turbaco, *Killip & Smith 14213* (NY).—Magdalena: 1 km E of Bonda along road from Santa Marta to Río Hacho, 11°15'N, 74°06'W, *Kirkbride 2492* (NY); Santa Marta, *Smith 490* (LL, NY). Norte de Santander: between Chinácota and La Esmeralda, *Killip & Smith 20924* (NY). **Ecuador**. El Oro: Santa Rosa, *Asplund 15707* (S); Huaquillas-frontier of Perú, *Jaramillo & Narváez 784* (QCA).—Guayas: 1 km NW of Chanduy towards Atahualpa, *Holm-Nielsen 2154* (AAU, F, GB, MO, S); 20 km S of Manglaralto, near Palmar, *Holm-Nielsen et al. 2483* (AAU, F, GB, NY); Playas, *Mille 166* (F, QCA, US); La Puntilla, Salinas, *Svenson 11253* (GH, NY, UC, US).—Loja: 10 km W of Vilcabamba, *Harling & Andersson 21774* (QCA).—Manabí: El Recreo, *Eggers 15778b* (F, K); Portoviejo, *Mille 1963* (F). **Peru**. Cajamarca: 2 km E of Chilete, *Burandt & Keil 2325* (NY).

19. Pseudabutilon virgatum (Cav.) Fryxell, comb. nov. *Sida virgata* Cav., Icon. 1: 53. t. 73. 1791. *Abutilon virgatum* (Cav.) Sweet, Hort. Brit. ed. 1. 1: 53. 1826.—Type: in Hort. Bot. Madrid ex Peru (holotype: MA–476302!; isotypes: CTES [fragment]! K! P as photo F-35549!). [The type is noted by Garilleti (1993: 141).]

Sida grevilleana Gillies ex Hook. f., Bot. Misc. 3: 154. 1832. *Abutilon grevilleanum* (Gillies ex Hook. f.) Walp., Repert. Bot. Syst. 1: 324. 1842.—TYPE: ARGENTINA. Mendoza: *Gillies 139* (holotype: K as photo CTES!; isotypes: G as photo F–8000! GH! OXF!).

Abutilon mendocinum Phil., Anal. Univ. Chile 36: 164. 1870.—TYPE: ARGENTINA. Mendoza: *Philippi 1874* (isotypes: GOET!, W as photo F–32633!).

Abutilon paranthemoides Griseb., Goett. Abh. 24: 46. 1879.—TYPE: ARGENTINA. Catamarca: Quebrada de Choya, *Schickendantz 208b* (holotype: GOET!).

Abutilon bridgesii Baker f., J. Bot. 31: 338. 1893.—TYPE: BOLIVIA. 1847, *Bridges s.n.* (BM! CTES [fragment]! K!).

Abutilon saltense Hassl., Repert. Nov. Sp. Regni Veg. 12: 498. 1913.—TYPE: ARGENTINA. Salta: in dumento Rosario de la Frontera, *Lillo 3877* (LIL n.v., "et herb. Hassler" G?).

Shrubs 0.5–2 m tall, the stems moderately to densely stellate-pubescent. Leaf blades 3–8 cm long, 2–5 cm wide, ovate or weakly 3-lobed, basally truncate to cordate, coarsely crenate-serrate, acute, palmately 7-nerved, softly and minutely stellate-pubescent, more densely so beneath, with often bifurcate hairs above; petioles 1/3–1 times as long as the blade, with pubescence like that of the stem; stipules 4–10 mm long, linear, pubescent. Flowers solitary or fasciculate in the leaf axils, sometimes in terminal racemes, with the leaves much reduced; pedicels 1–35 mm long, pubescent; calyx 5–8 mm long, ca. half-divided, densely stellate-pubescent, sometimes with long (1–2 mm) simple hairs in addition, especially at base; petals 4–8 mm long, yellow, pubescent on margins of claw, otherwise glabrous; staminal column 2 mm long, pallid, distally pubescent, the filaments 1.5 mm long; styles 7–9, pallid. Fruits 6–9 mm long (exceeding the calyx), 5–9 mm in diameter, stellate-pubescent; mericarps 6–10, with apical spines 1–2 mm long, 3-seeded, without an endoglossum; seeds 2 mm long, sparsely and minutely pubescent.

Distribution. Ecuador, Peru, Bolivia, Paraguay, and Argentina, at elevations up to 2000 m.

ADDITIONAL SPECIMENS EXAMINED. **Ecuador**. LOJA: 4–6 km N of Yangana, on road to Vilcabamba, *Harling & Andersson 21650* (GB); Mollococha, ca. 10 km W of Vilcabamba, *Harling & Andersson 21774* (GB, NY). **Peru**. APURIMAC: 15 km NW of Chalhuanca, below village of Pakayca, *Gentry et al. 23322* (MO); SW of Abancay on road to Pachachaca, *Iltis et al. 619* (MO).—HUÁNUCO: 7.8 km NE of Huánuco at Hda. Colcuy, *Bird 1092* (MO, NY). **Bolivia**. Cotaña am Illimani, Nov 1911, *Buchtien 3215* (MO, NY).—COCHABAMBA: Panduro, near Río Caine, *Cárdenas 2434* (NY, US); Cochabamba, *Cárdenas 3784* (CAS, DS).—LA PAZ: Inquisivi, 4 km SE of Inquisivi, 16°55'S, 67°6'W, *Lewis 35093* (MO, NY).—TARIJA: Ruta Tarija–Villa Montes, 15 km E de Entre Ríos, *Krapovickas et al. 19129* (CTES, LL); Prov. Arce, 31 km S of road to Entre Ríos on road to Padayca, 21°49'S, 64°40'W, *Solomon 10573* (MO, NY). **Paraguay**. BOQUERÓN: 5 km NW de Mariscal Estigarribia, *Krapovickas & Cristóbal 44374* (CTES, TEX).—CHACO: Chaco Paraguayo, F. Olimpo, *Rojas 13617* (MO, TEX); Cerro León, 20°26'S, 60°15'W, *Schinini & Bordas 17830* (MO).—CENTRAL: Jardín Botánico y Zoológico, Trinidad, Asunción, 25°20'S, 57°28'W, *Pérez 97* (AS, MO); Cerro Koí–Areguá, *Schinini 4019B* (CTES, NY). **Argentina**. CATAMARCA: Depto. La Paz, El Río de la Dorada, *Brizuela 959* (TEX); Depto. Ancasti, La Brea, *Brizuela 1302* (MO); Depto. Andalgalá, 16 km SE of Andalgalá on road to Cuesta de la Chilca, *Cantino 766* (ARIZ, GH).—CÓRDOBA: Depto. Unión, Bell Ville, Parque Tau, *Ferrucci 584* (CTES, NY); Depto. Punilla, San Estebán, *Vellofane 443* (CAS).—CORRIENTES: Corrientes, *Krapovickas 43693* (CTES, NY); Depto. Berón de Astrada, 46 km W de Itá Ibaté, Valencia, *Schinini 14051* (CTES, F, NY).—JUJUY: Depto. Tumbaya, acceso a Purmamarca, *Krapovickas & Cristóbal 17636* (CTES, NY).—LA PAMPA: Depto. Lihuel Calel, Sierra de Lihuel Calel, *Krapovickas et al. 22625* (CTES, NY).—MENDOZA: Depto. San Rafael, Serrito, *Spegazzini 22556* (NY).—SALTA: Depto. Chicoana, Chicoana, Los Los, *Krapovickas et al. 28260* (CTES, NY); Depto. Rosario de la Frontera,

Almirante Brown, *O'Donell 5392* (CAS, TEX).—TUCUMÁN: Depto. Leales, La Florida, Ruta Nac. 9, *Krapovickas & Cristóbal 17335* (LL, NY); Depto. Trancas, Vipos, Ruta 9, *Krapovickas & Cristóbal 17742* (CTES, LL, MO, NY).

EXCLUDED NAMES

Pseudabutilon hitchcockii Ulbr., Notizbl. Bot. Gart. Berlin 11: 522. 1932. = *Abutilon dispermum* (Hochr.) Fryxell.

Pseudabutilon langlassei Hochr., Annuaire Conserv. Jard. Bot. Genève 20: 120. 1917. = *Allosidastrum hilarianum* (C. Presl) Krapov., Fryxell & D. M. Bates.

Pseudabutilon lozanii (Rose) R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 100. 1908. = *Allowissadula lozanii* (Rose) D. M. Bates.

Pseudabutilon pringlei (Rose) R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 99. 1908. = *Allowissadula pringlei* (Rose) D. M. Bates.

Pseudabutilon rosei R. E. Fr., Kongl. Svenska Vetenskapskad. Handl. 43(4): 102. 1908. = *Allowissadula rosei* (R. E. Fr.) D. M. Bates.

Pseudabutilon smithii Hochr., Annuaire Conserv. Jard. Bot. Genève 20: 119. 1917. = *Allosidastrum interruptum* (DC.) Krapov., Fryxell & D. M. Bates.

Pseudabutilon spicatum (H. B. K.) R. E. Fr., Kongl. Svenska Vetenskapsakad. Handl. 43(4): 98. 1908. = *Briquetia spicata* (H. B. K.) Fryxell.

Pseudabutilon weberbaueri Ulbr., Jahrb. Bot. Syst. 54 (Beibl. 117): 60. 1916.—TYPE: PERU. Cajamarca. Prov. Jaén: Tal des Flusses Shumba, eines rechten Nebenflusses des Chinchipe, 5°30'S, *Weberbauer 6169* (holotype: B?; isotypes: CTES fragment! GH!). = *Tetrasida serrulata* Fryxell & Fuertes, nom. superfl.; correct name: **Tetrasida weberbaueri** (Ulbr.) Fryxell & Fuertes, comb. nov.

Sida dictyocarpa Morong & Britton, Ann. New York Acad. Sci. 7: 56. 1892, nomen nudum, non *Sida dictyocarpa* F. Muell. ex Benth. (1862), nec *Sida dictyocarpa* Griseb. ex K. Schum. (1891).

Sida dictyocarpa var. *cordobensis* Baker f. ex Morong & Britton, Ann. N. Y. Acad. Sci. 7: 56. 1892, nomen nudum.

LITERATURE CITED

Bates, D. M. 1966. Chromosome numbers in the Malvales. I. Gentes Herb. 10: 39–46.

———. 1971. Malvaceae. In *Flora of the Galápagos Islands*, ed. I. L. Wiggins and D. M. Porter, 666–694. Stanford: Stanford University Press.

———. 1976. Chromosome numbers in the Malvales. III. Miscellaneous counts from the Byttneriaceae and Malvaceae. Gentes Herb. 11: 143–150.

———. 1978a. *Bastardiastrum*, a segregate from *Wissadula* (Malvaceae). Gentes Herb. 11: 311–328.

———. 1978b. *Allowissadula*, a new genus of North American Malvaceae. Gentes Herb. 11: 329–354.

Fernández, A. 1974. Recuentos cromosómicos en Malváceas. Bol. Soc. Argent. Bot. 15: 403–410.
Fries, R. E. 1908. Entwurf einer Monographie der Gattungen *Wissadula* und *Pseudabutilon*. Kongl. Svenska Vetenskapsakad. Handl. 43(4): 1–114 + 10 plates.
Fryxell, P. A. 1976. New species and new combinations in *Briquetia* and *Hochreutinera*, and a discussion of the *Briquetia* generic alliance (Malvaceae). Brittonia 28: 318–325.
———. 1988. Malvaceae of Mexico. Syst. Bot. Monogr. 25: 1–522.
———. 1997. The American genera of Malvaceae—II. Brittonia 49: 204–269.
Fryxell, P. A., and D. M. Stelly. 1993. Additional chromosome counts in the Malvaceae. Sida 15: 639–647.
Garilleti, R. 1993. Herbarium Cavanillesianum. Fontqueria 38: 1–248.
Hochreutiner, B. P. G. 1920. Organes carpiques nouveaux ou méconnus chez les Malvacées. Annuaire Conserv. Jard. Bot. Genève 21: 347–387.
Hutchinson, J. 1967. Malvaceae. In *The genera of flowering plants* by J. Hutchinson, 2: 536–567.
Kearney, T. H. 1951. The American genera of Malvaceae. Amer. Midl. Natural. 46: 93–131.
———. 1952. Notes on Malvaceae III. *Abutilon* and *Pseudabutilon* in the Galapagos Islands. Madroño 11: 285–289.
———. 1955. A tentative key to the North American species of *Abutilon* Miller. Leafl. W. Bot. 7: 241–254.
———. 1958. A tentative key to the South American species of *Abutilon* Miller. Leafl. W. Bot. 8: 201–216.
Krapovickas, A. 1957. Números cromosómicos de Malváceas americanas de la tribu Malveae. Rev. Agronom. Noroeste Argent. 2: 245–260.
Krapovickas, A., P. A. Fryxell, and D. M. Bates. 1988. *Allosidastrum*, un nuevo género de Malvaceae de los neotrópicos. Bol. Soc. Bot. México 48: 23–34.
Robyns, A. 1966. Flora of Panama. Family 115. Malvaceae. Ann. Missouri Bot. Gard. 52: 497–578.

INDEX TO SCIENTIFIC NAMES